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PATENT  
(5681-67300/P9675)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/696,891  
Filed: October 30, 2003  
Inventor(s):  
Robert E. Cypher

§ Examiner: Unknown  
§ Group/Art Unit: 2131  
§ Atty. Dkt. No: 5681-67300

Title: **ECC FOR COMPONENT FAILURES USING GALOIS FIELDS**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Lawrence J. Merkel

Name of Registered Representative

Signature

Date

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicant requests consideration of  the references listed on the attached Form PTO-1449 and/or  the additional information identified below in paragraph 3.

- A copy of each required reference listed on the Form PTO-1449 is enclosed.
- The references listed on the Form PTO-1449 were previously cited in application serial no. \_\_\_\_\_ to which the captioned application is seeking priority under 35 U.S.C. §120; therefore, a copy of each reference is not enclosed.
- The present application is a U.S. national patent application filed after June 30, 2003, or an international application that entered the national stage under 35 USC § 371 after June 30, 2003. Therefore, copies of the cited U.S. patents and/or U.S. patent application publications are not enclosed.

1. This Information Disclosure Statement is submitted:

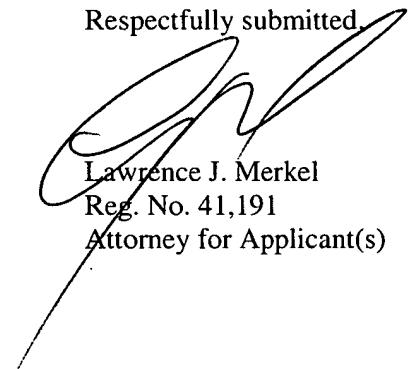
- a.  within 3 months of the filing date of a national application other than a continued prosecution application under § 1.53(d);

- within 3 months of the date of entry of the national stage as set forth in § 1.491 in an International application;
  - before the mailing date of a first Office Action on the merits; or
  - before the mailing of a first Office Action after the filing of a request for continued examination under § 1.114.
- b.  after the events of above paragraph 1a and prior to the mailing date of a final Office Action or Notice of Allowance, and thus:  the certification of paragraph 2 below is provided, or  a fee of \$180.00 is enclosed.
- c.  after the mailing date of a final Office Action or a Notice of Allowance and prior to payment of the issue fee, and thus: the certification of paragraph 2 below is provided and a fee of \$180.00 is enclosed.
2. It is hereby certified:
- that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in § 1.56(c) more than thirty (30) days prior to the filing of the information disclosure statement;
  - that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of the Statement; or
  - that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in § 1.56 (c) more than three (3) months prior to the filing of the Statement.
3.  Consideration of the following additional information (including any co-pending or abandoned U.S. applications, prior uses and/or sales, etc.) is requested:
4. For each non-English language reference listed on the attached Form PTO-1449:
- reference is made to an English language translation submitted herewith, and/or
  - reference is made to a foreign patent office search report (in the English language) submitted herewith, and/or
  - reference is made to an English language translation of a foreign patent office search report submitted herewith, and/or
  - reference is made to the concise explanation contained in the specification of the present application at page(s) \_\_\_\_\_, and/or
  - reference is made to the concise explanation set forth below:

5.  Applicant also offers the following comments for the Examiner's consideration:
6.  Also enclosed is a copy of a foreign search report citing these references.
7.  The listed documents were brought to the attention of the Applicant(s) after payment of the issue fee in the captioned case. The documents were cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. Applicant(s) request this Information Disclosure Statement and attached Form PTO-1449 be placed in the file of the captioned application.
8.  Applicant(s) requests that the Information Disclosure Statement and attached Form PTO-1449 and references, which are being filed before the grant of the patent and pursuant to 37 C.F.R. § 1.97(i), be placed in the file of the captioned application.

If any required fees are missing, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505/5681-67300/LJM.

Respectfully submitted,



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Date: 4/14/05

**Form PTO-1449** (modified)  
 List of Patents and Publications  
 For Applicant's Information  
 Disclosure Statement  
 (Use several sheets if necessary)

ATTY. DKT. NO. 5681-67300

SERIAL NO. 10/696,891

APPLICANT: Robert E. Cypher

GROUP: 2131

FILING DATE: October 30, 2003

**U.S. PATENT DOCUMENTS**

| EXAM.<br>INITIALS | REF.<br>DES. | DOCUMENT NUMBER | DATE     | NAME               | CLASS | SUB<br>CLASS | FILING DATE IF<br>APPROPRIATE |
|-------------------|--------------|-----------------|----------|--------------------|-------|--------------|-------------------------------|
|                   | E1           | 2001/0001158    | 5/10/01  | Tetrick            |       |              |                               |
|                   | E2           | 6246616         | 6/12/01  | Nagai, et al       |       |              |                               |
|                   | E3           | 6233717         | 5/15/01  | Choi               |       |              |                               |
|                   | E4           | 6223301         | 4/24/01  | Santeler, et al    |       |              |                               |
|                   | E5           | 6209113         | 3/27/01  | Roohparvar         |       |              |                               |
|                   | E6           | 6181614         | 1/30/01  | Aipperspach, et al |       |              |                               |
|                   | E7           | 6167495         | 12/26/00 | Keeth, et al       |       |              |                               |
|                   | E8           | 6158025         | 12/5/00  | Brisse, et al      |       |              |                               |
|                   | E9           | 6141789         | 10/31/00 | Cypher             |       |              |                               |
|                   | E10          | 6115828         | 9/5/00   | Tsutsumi, et al    |       |              |                               |
|                   | E11          | 6101614         | 8/8/00   | Gonzales, et al    |       |              |                               |
|                   | E12          | 6076182         | 6/13/00  | Jeddeloh           |       |              |                               |
|                   | E13          | 6065102         | 5/16/00  | Peters, et al      |       |              |                               |
|                   | E14          | 6044483         | 3/28/00  | Chen, et al        |       |              |                               |
|                   | E15          | 6070255         | 5/30/00  | Dell, et al        |       |              |                               |
|                   | E16          | 6052818         | 4/18/00  | Dell, et al        |       |              |                               |
|                   | E17          | 6038680         | 3/14/00  | Olarig             |       |              |                               |
|                   | E18          | 6018817         | 1/28/00  | Chen, et al        |       |              |                               |
|                   | E19          | 6009548         | 12/28/99 | Chen, et al        |       |              |                               |
|                   | E20          | 5987628         | 11/16/99 | Von Bokern, et al  |       |              |                               |
|                   | E21          | 5978952         | 11/2/99  | Hayek, et al       |       |              |                               |
|                   | E22          | 5953265         | 9/14/99  | Walton, et al      |       |              |                               |
|                   | E23          | 5928367         | 7/27/99  | Nelson, et al      |       |              |                               |
|                   | E24          | 5923682         | 7/13/99  | Seyyedy            |       |              |                               |
|                   | E25          | 5909541         | 6/1/99   | Sampson, et al     |       |              |                               |
|                   | E26          | 5872790         | 2/16/99  | Dixon              |       |              |                               |
|                   | E27          | 5822257         | 10/13/98 | Ogawa              |       |              |                               |

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

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|-------------------|--------------|-----------------|----------|------------------------|-------|--------------|-------------------------------|
|                   | E28          | 5758056         | 5/26/98  | Barr                   |       |              |                               |
|                   | E29          | 5682394         | 10/28/97 | Blake, et al           |       |              |                               |
|                   | E30          | 5640353         | 6/17/97  | Ju                     |       |              |                               |
|                   | E31          | 5502675         | 3/26/96  | Kohno, et al           |       |              |                               |
|                   | E32          | 5490155         | 2/6/96   | Abdoo, et al           |       |              |                               |
|                   | E33          | 5291496         | 3/1/94   | Andaleon, et al        |       |              |                               |
|                   | E34          | 5276834         | 1/4/94   | Mauritz, et al         |       |              |                               |
|                   | E35          | 5255226         | 10/19/93 | Ohno, et al            |       |              |                               |
|                   | E36          | 5233614         | 8/3/93   | Singh                  |       |              |                               |
|                   | E37          | 5228046         | 7/13/93  | Blake, et al           |       |              |                               |
|                   | E38          | 5164944         | 11/17/92 | Benton, et al          |       |              |                               |
|                   | E39          | 5077737         | 12/31/91 | Leger, et al           |       |              |                               |
|                   | E40          | 5058115         | 10/15/91 | Blake, et al           |       |              |                               |
|                   | E41          | 4604751         | 8/5/86   | Aichelmann, Jr., et al |       |              |                               |
|                   | E42          | 4584681         | 4/22/86  | Singh, et al           |       |              |                               |
|                   | E43          | 4376300         | 3/8/83   | Tsang                  |       |              |                               |
|                   | E44          | 5,463,644       | 10-1995  | Rodi et al.            |       |              |                               |
|                   | E45          | 4,434,459       | 2-1984   | Holland et al.         |       |              |                               |
|                   | E46          | 6,505,305       | 1-2003   | Olarig, Sompong P.     |       |              |                               |
|                   | E47          | 2003/0093744    | 5-2003   | Leung et al.           |       |              |                               |
|                   | E48          | 2003/0163777    | 8-2003   | Holt, Keith W.         |       |              |                               |
|                   | E49          | 2003/0133611    | 12-2003  | Humlicek et al.        |       |              |                               |
|                   | E50          | 5,867,642       | 2/2/99   | Vivio, et al.          |       |              |                               |
|                   | E51          | 5,757,823       | 5/26/98  | Chen, et al.           |       |              |                               |

### OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

|  |     |   |
|--|-----|---|
|  | E52 | Polianskikh, B. et al., "design and Implementation of Error Detection and Correction Circuitry for Multilevel Memory Protection," Multiple-Valued Logic 2000. ISMVL 2002. Proceedings 32 <sup>nd</sup> IEEE International Symposium on 5-18 May 2002, Pages 89-95 |
|  | E53 | K. A. S. Immink, "A Practical Method for Approaching the Channel Capacity of Constrained Channels," September 1997, IEEE Transactions on Information Theory, Vol. 43, No. 5, Pages 1389-1399  |

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